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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,146	06/26/2001	Thomas Malzbender	10003322-1	3830

7590 04/07/2004  
HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, CO 80528-9599

EXAMINER

SANTIAGO, ENRIQUE L

ART UNIT	PAPER NUMBER
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2671

DATE MAILED: 04/07/2004

4

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/893,146

Applicant(s)

MALZBENDER ET AL.

Examiner

Enrique L. Santiago

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-8 is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### **Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto US patent no. 6,256,036 B1 in view of Wakabayashi 6,407,738 B1 and further in view of Payne US patent application publication no. 2002/0075283 A1.

-Regarding claim 1, Matsumoto teaches a method of operating a data processing system to generate a three-dimensional model of a scene from a plurality of photographs of said scene comprising (see column 1, line 60-column 2, line 3): defining an interior space containing part of said scene (see column 6, lines 26-31), said interior space being divided into a plurality of interior voxels (see figs. 23, 27 and 35, column 22, lines 11-16); defining an exterior space surrounding said interior space (see column 21, lines 54-58), said exterior space being divided into a plurality of exterior voxels (see column 15, lines 64-67, column 21, lines 54-58), and examining each voxel in said interior and exterior spaces to determine if said voxel can be seen in at least two of said photographs (see figs. 9 and 12, column 18, line 66-column 19, line 13), and if said voxel can be seen, determining whether said voxel is empty (see column 13, lines 50-64).

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Matsumoto does not directly teach a method wherein at least two of said exterior voxels have different sizes. However in similar art Wakabayashi teaches said limitation (see figs. 16 and 17, column 4, lines 18-28).

Therefore it would have been obvious to one skilled in the art at the time of the invention to use said method because, it could provide a method and a unit for the formulation of an analytical model that can be analyzed using a conventional analytical processing unit while automatic element division is performed using voxel data (see column 1, lines 50-53).

Matsumoto and Wakabayashi do not directly teach method wherein at least one of said exterior voxels is being warped. However in similar art Payne teaches said method (see column 4, paragraph 0051, lines 6-9). Therefore it would have been obvious to one skilled in the art at the time of the invention to use said method, because it would allow computing shape changes in certain situations where a direct computation is cumbersome or otherwise inconvenient (see the abstract).

-Regarding claim 2, Matsumoto further teaches a method wherein all of said interior voxels have the same size (see fig. 23, column 18, lines 11-22 and 39-42).

-Regarding claim 3, Wakabayashi further teaches a method wherein the size of said exterior voxels increases as a function of the distance between said exterior voxels and said interior space (see column 15, lines 18-26).

### **Response to Arguments**

Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

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Applicant's arguments with respect to claim 4 have been fully considered and are persuasive. The 35 U.S.C. 112, second paragraph, rejection of claim 4 has been withdrawn.

Infinite is taken to mean maximum voxel size at maximum distance.

#### **Allowable Subject Matter**

Claims 6-8 are allowed.

#### **Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US patent no. 6,570,952 B2

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Enrique L. Santiago whose telephone number is (703) 306-5908.

The examiner can normally be reached on Monday to Friday from 7:00 A.M. to 3:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman, can be reached at (703) 305-9798.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Enrique L. Santiago

April 3, 2004

  
MARK ZIMMERMAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600